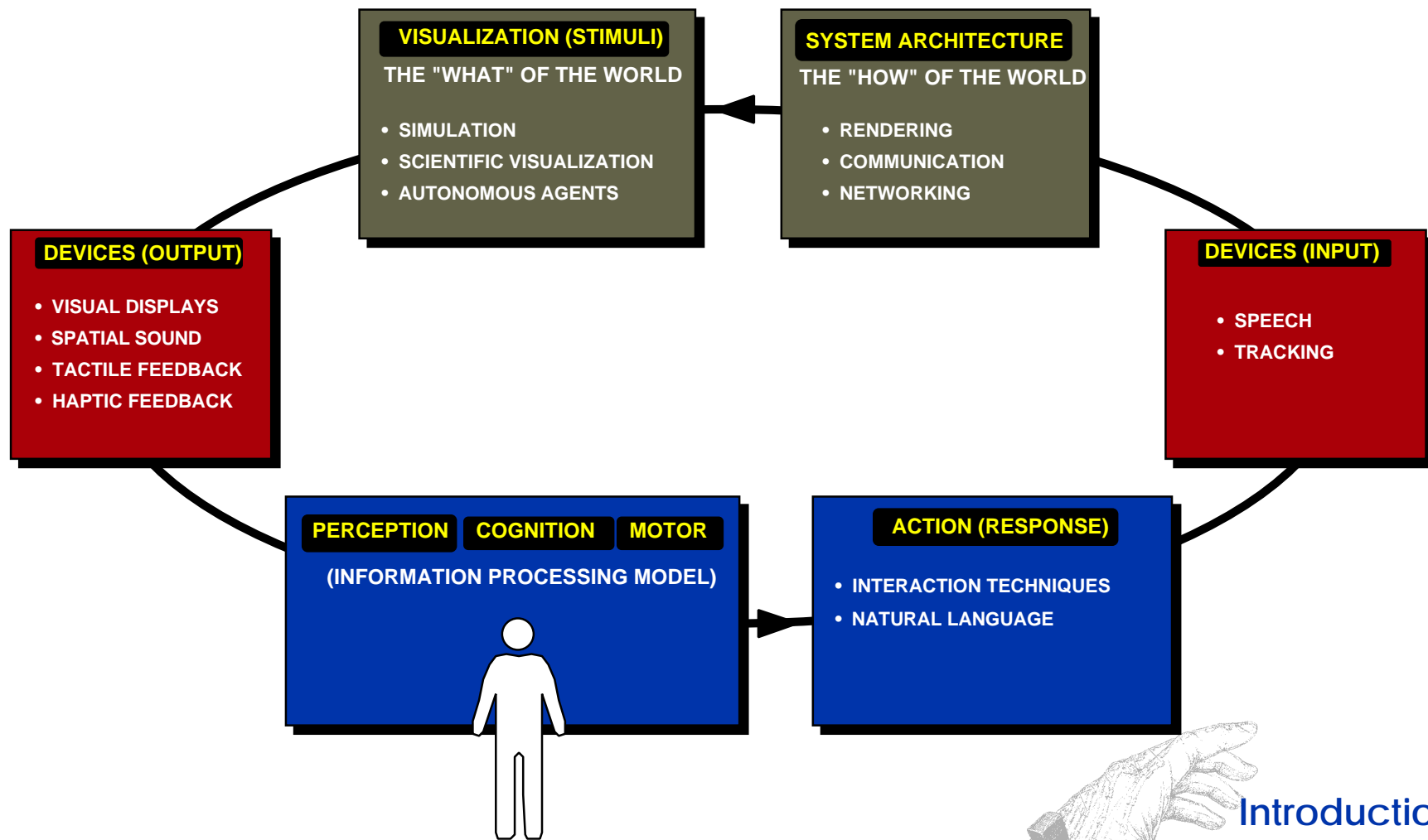


# Overview

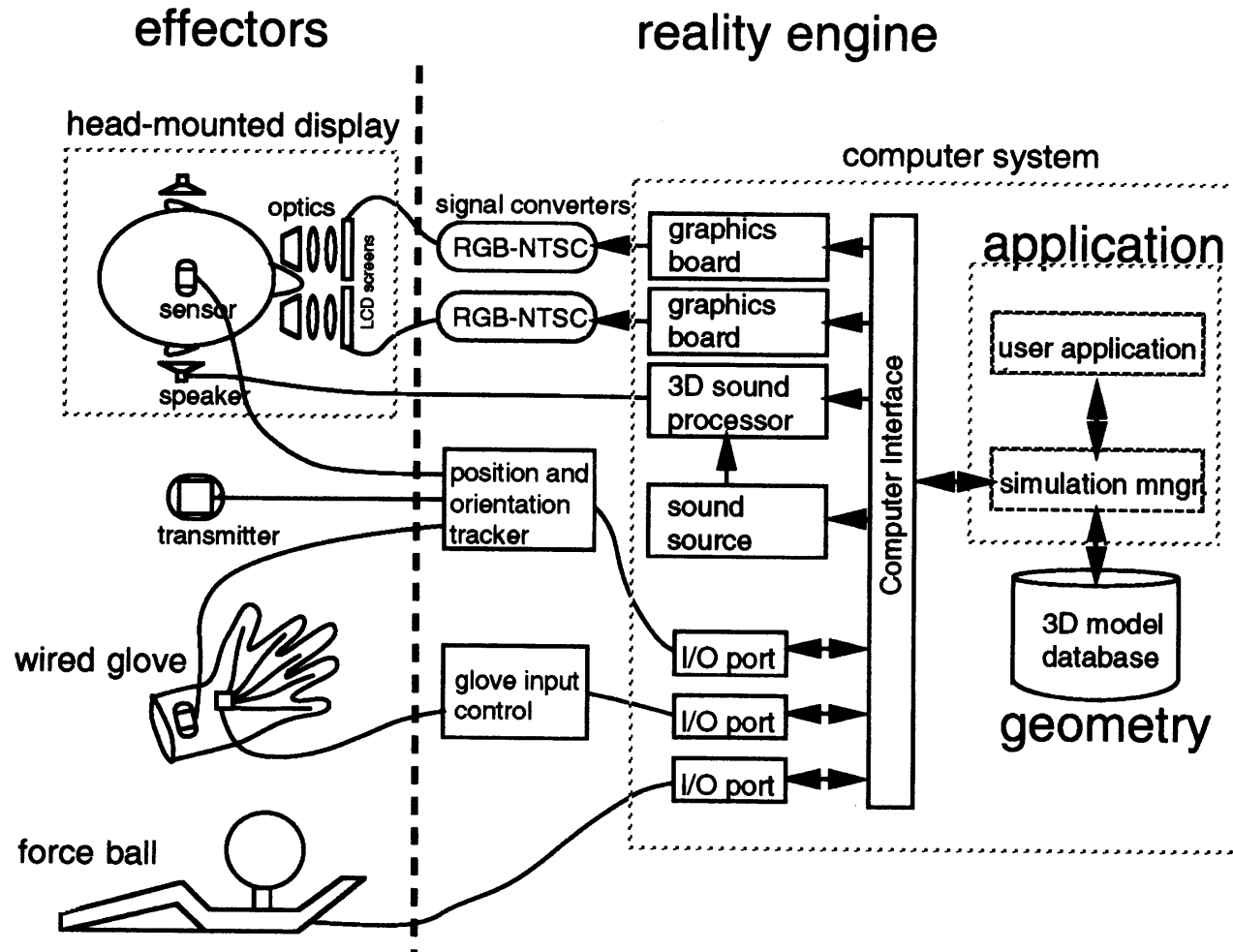
- **Conceptual structure**
- **Software models**
- **Networking**



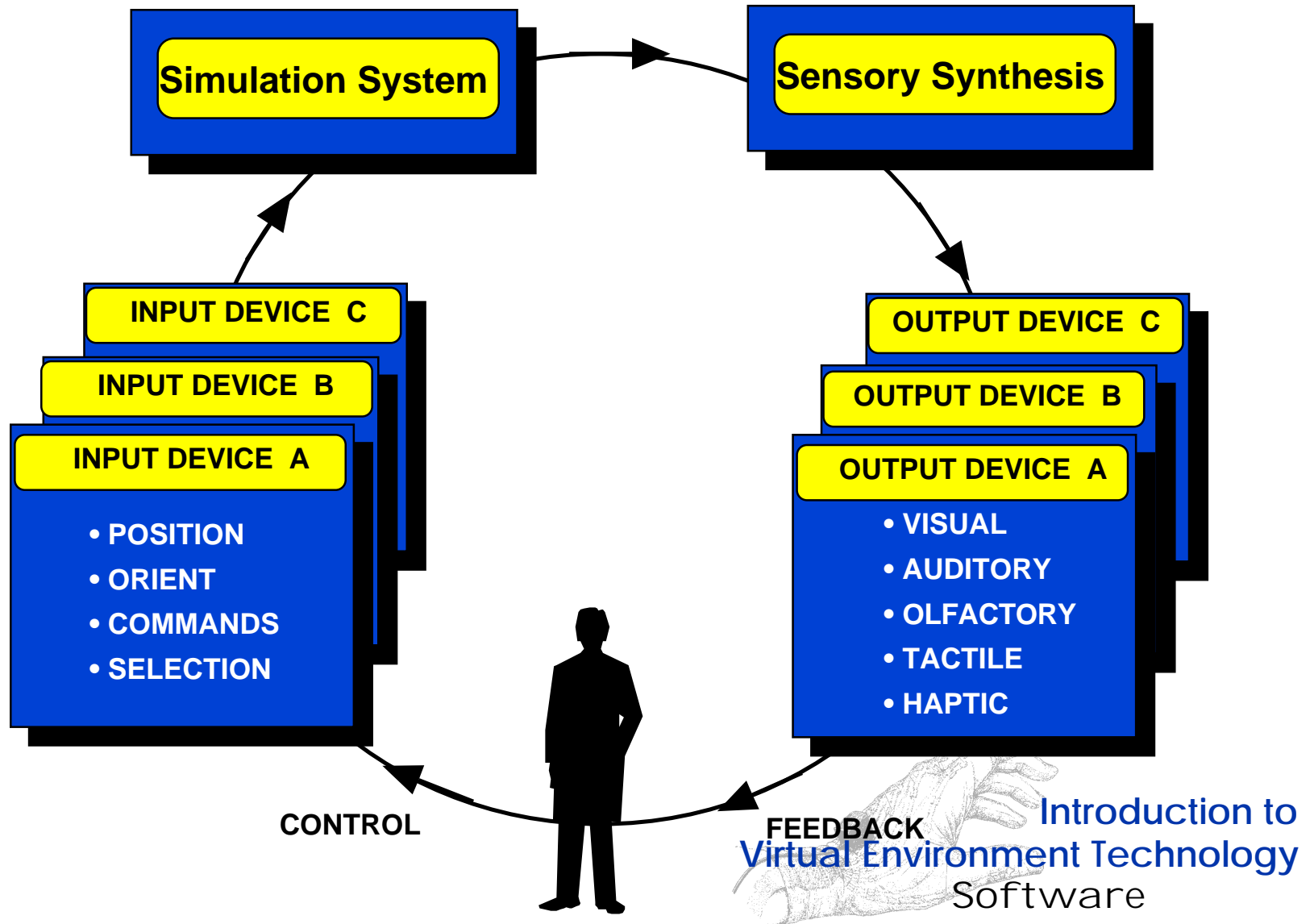
# Conceptual Model



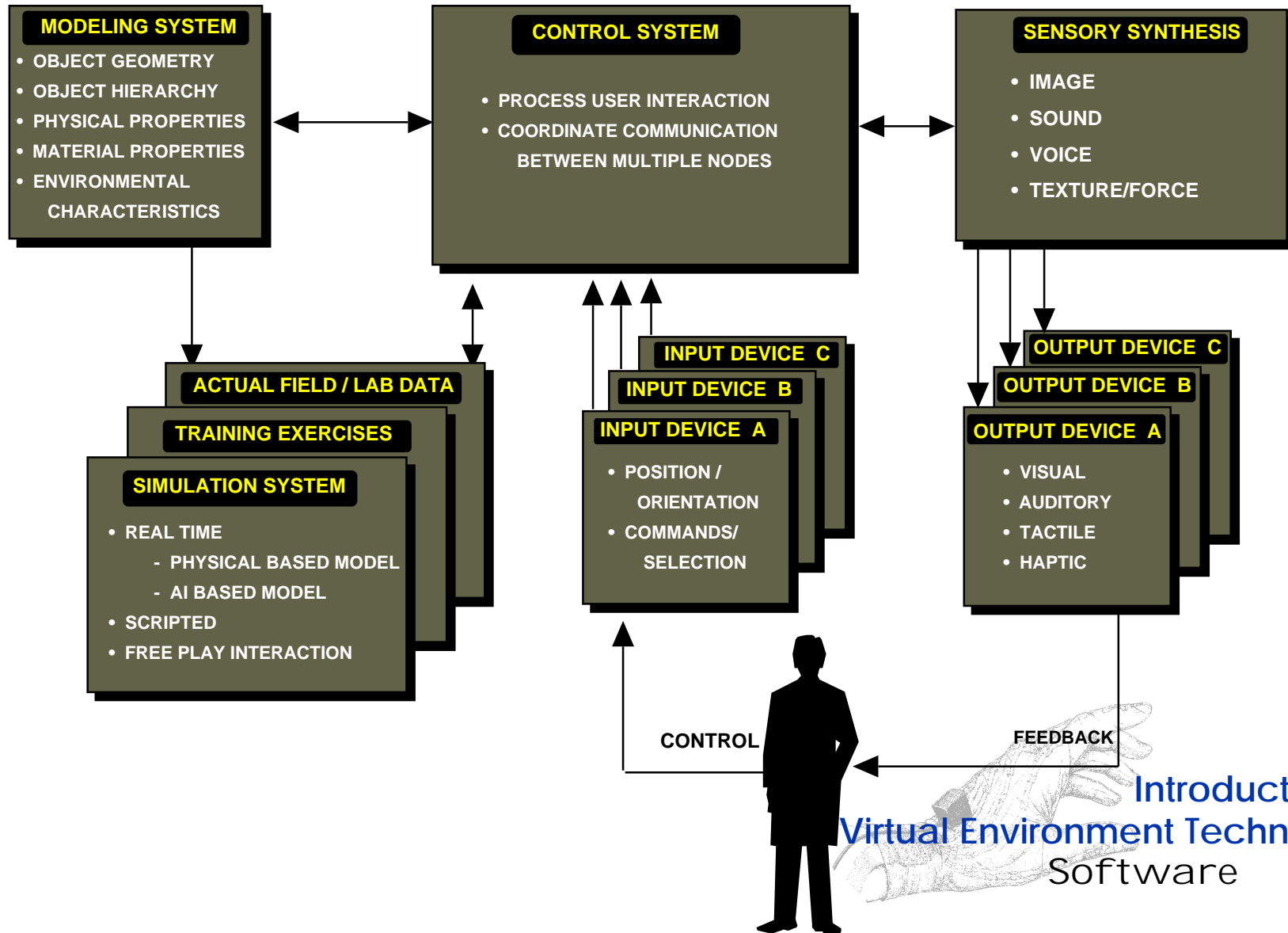
# System Components



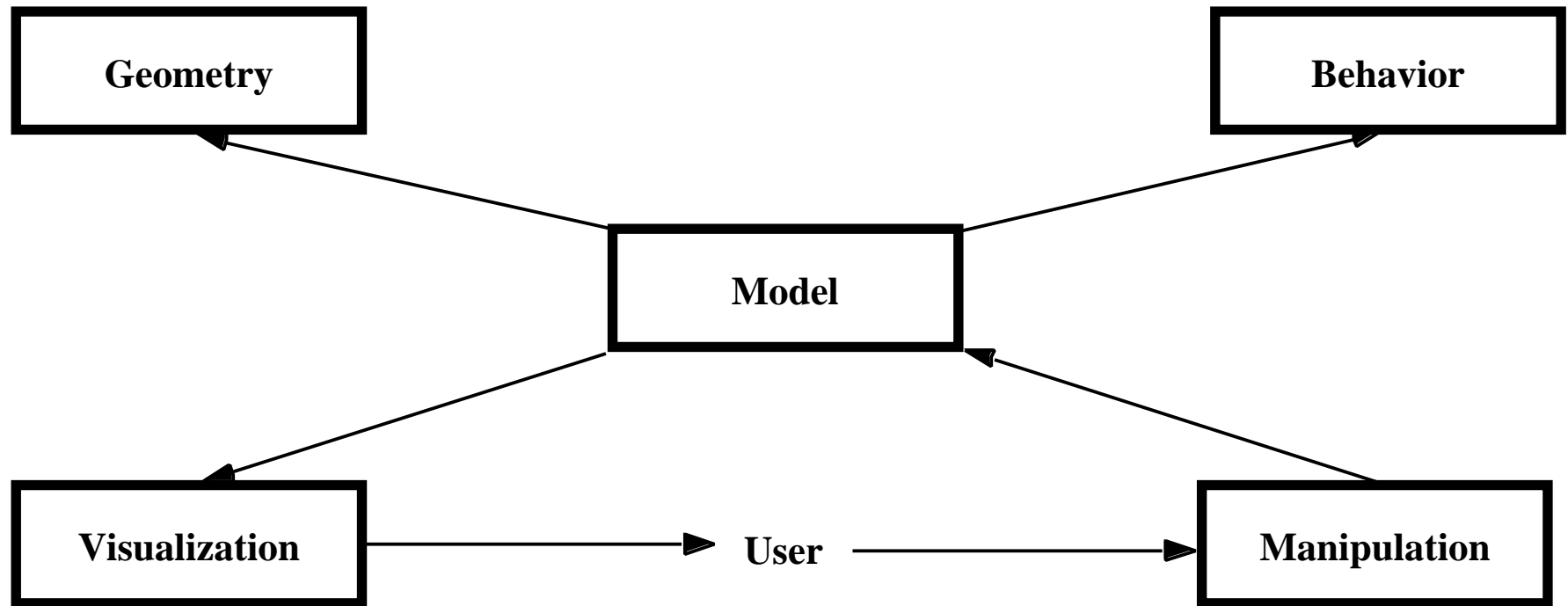
# Simple I/O Loop



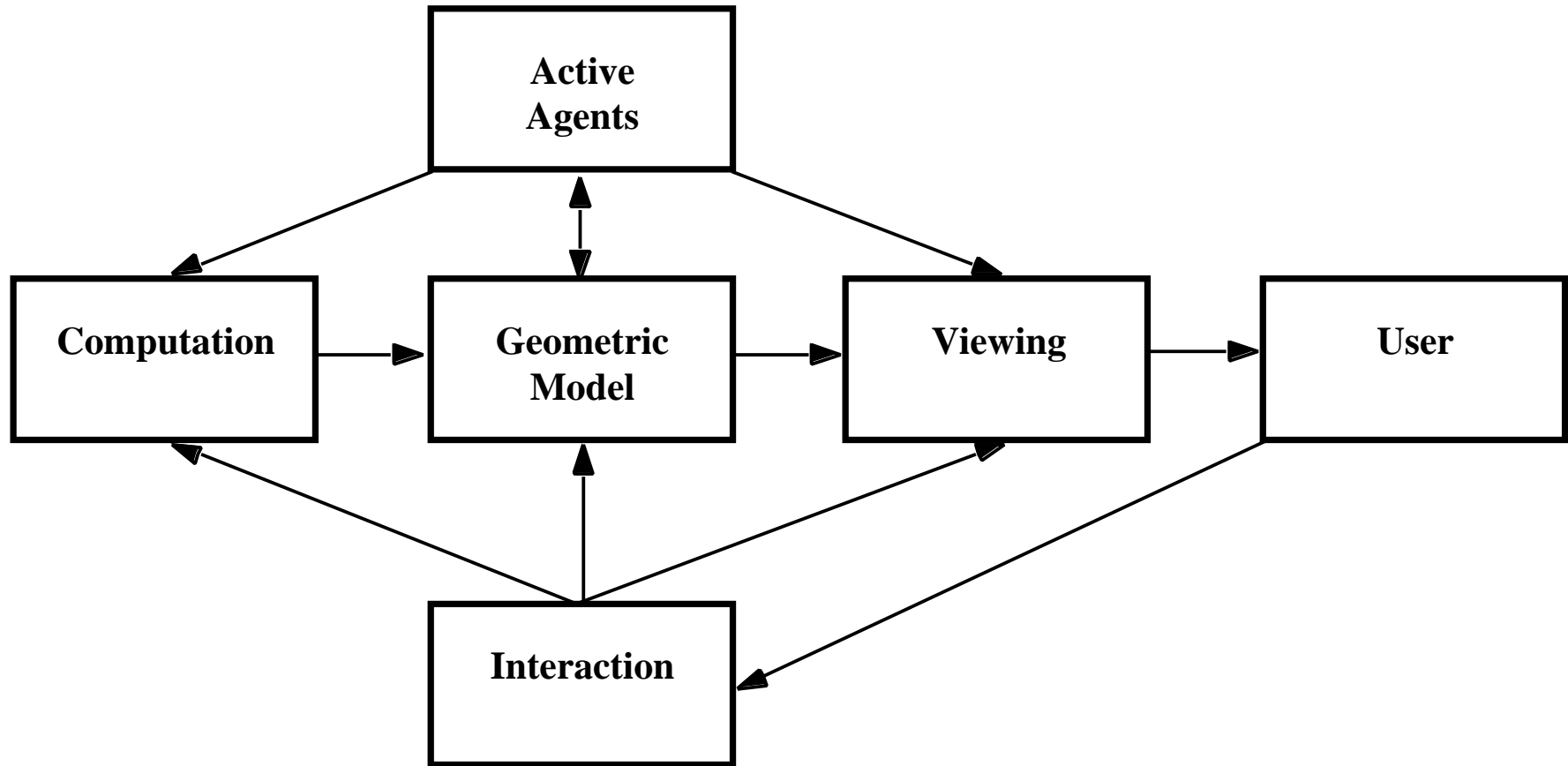
# More Detail



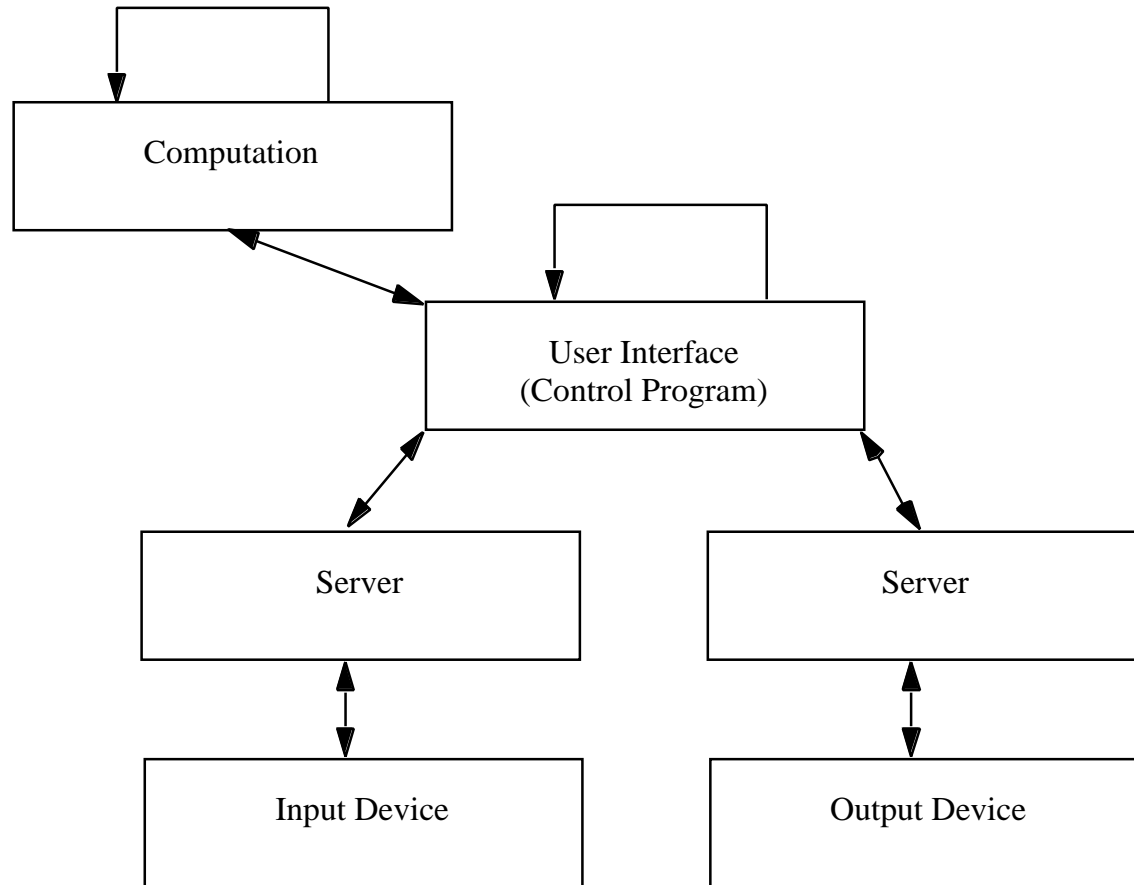
# Artificial Reality Metaphor



# More Detail

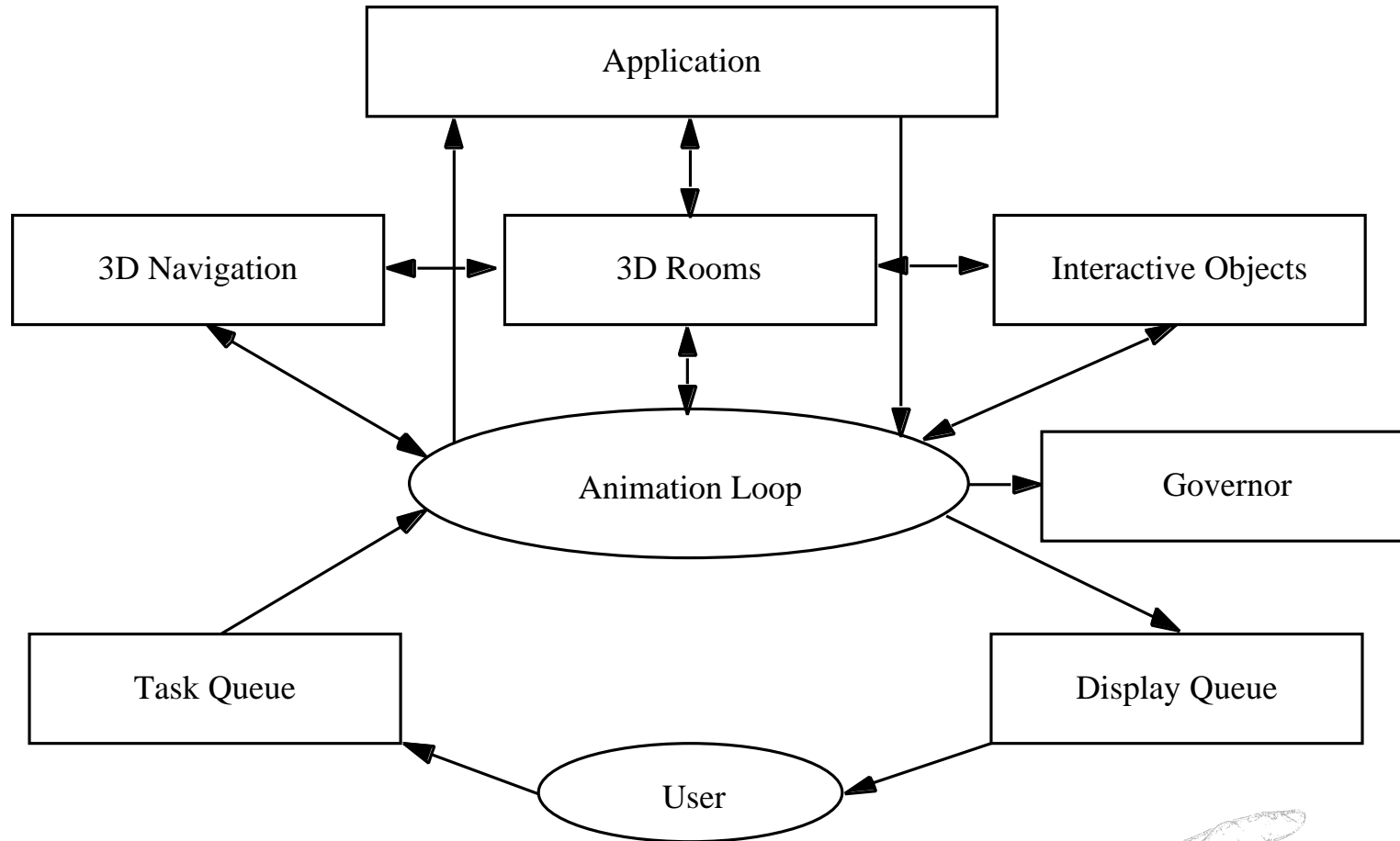


# Decoupled Simulation Model



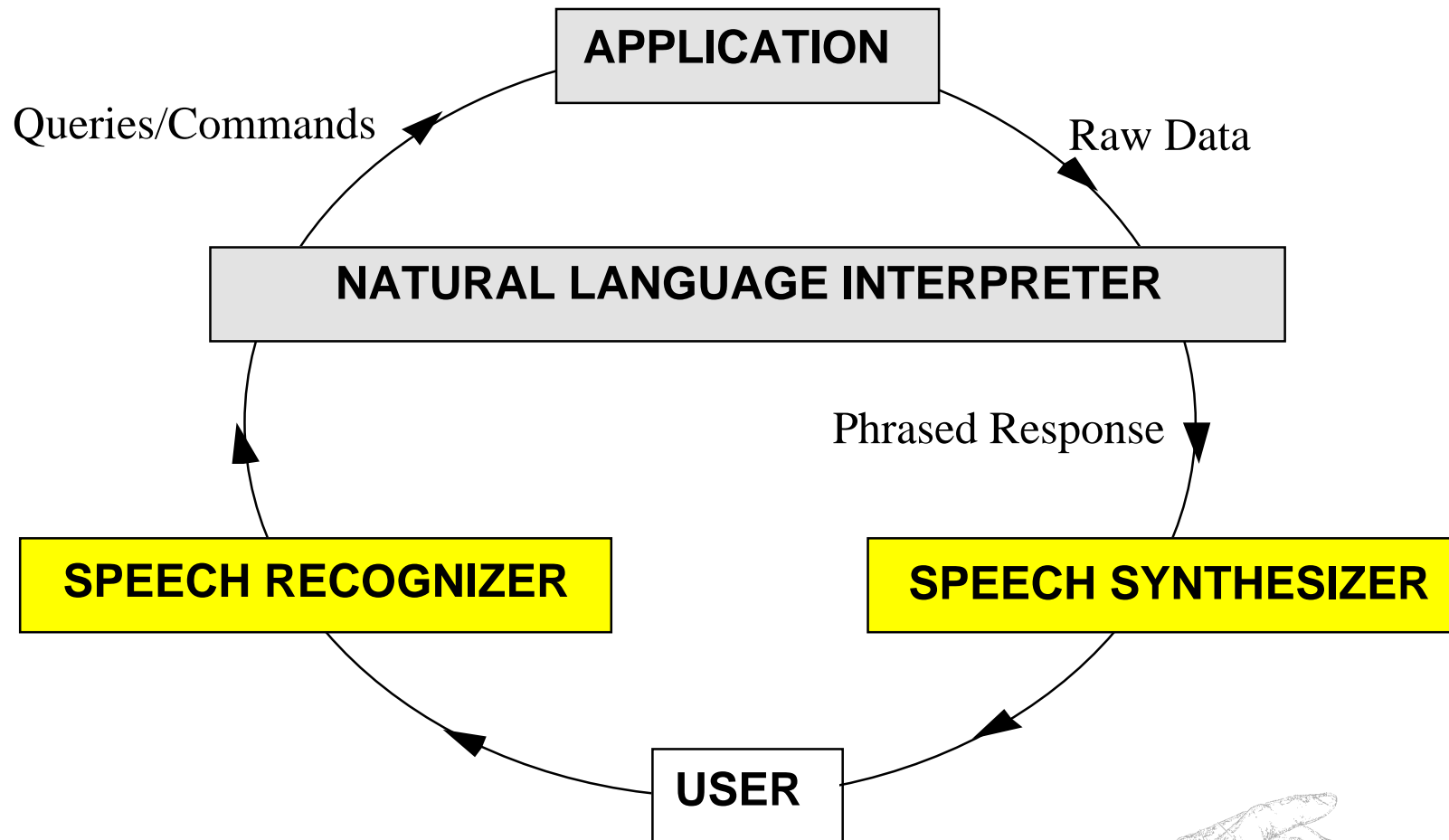


# Cognitive Coprocessor Architecture



Xerox PARC

# Natural Language



# Networking

- **Multiplayer issues**
  - DIS/HLA
  - Dead-reckoning algorithms
- **Data Sharing**
  - VRML
- **Streaming audio/video**
  - Shared experience

**video**



# Other Issues

- **Multimodal interaction/feedback**
- **Line-of-sight culling**
- **Interaction techniques**
  - Is there any advancement here?
  - How do we generalize?
    - Selection, position, orientation, path, quantify, text
- **Dynamic environments**
- **Expression in the interface**

**video**

